



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/024,020

12/21/2001

Gin Liu

213202.00355

3692

27160

7590

09/05/2006

EXAMINER

GHULAMALI, QUTBUDDIN

PATENT ADMINISTRATOR  
KATTEN MUCHIN ROSENMAN LLP  
1025 THOMAS JEFFERSON STREET, N.W.  
EAST LOBBY: SUITE 700  
WASHINGTON, DC 20007-5201

ART UNIT

PAPER NUMBER

2611

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/05/2006 has been entered.

### ***Response to Amendment***

2. Applicant's remark/amendments, filed 07/05/2006, with respect to the rejection(s) of claim(s) 1-7, 10-16, 31-37 under 35 U.S.C 102(e), have been fully considered. The amendment however, does not place the application in condition for allowance. A new ground of rejection based on continued examination and amendment filed 07/05/2006, is made herein. The rejection follows.

### ***Drawings***

3. The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing.

Art Unit: 2611

Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d).

The drawing marked as "Figure" is objected to under 37 CFR 1.83(a) because it fail to show, a first and second circuit for determining and storing, a first receiver for retrieving, an analyzer, etc..., as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet, should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-7, 10-16, 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levin (USP 6,130,882) in view of Zuranski et al (USP 6,263,077).

Regarding claims 1 and 10, Levin discloses a method and an apparatus of retrieving channel characteristics of a discrete multi-tone communication channel comprising:

determining and storing on a per bin basis channel frequency response and noise measurements at a first end (Central Office (CO)) of the channel at initialization (abstract; col. 1, lines 37-42; col. 3, lines 60-63);

determining and storing a signal-to-noise measurement on a per bin basis at the first end (Central Office (CO)) at show time (col. 4, lines 1-9; col. 8, lines 10-25);

retrieving the stored (look-up table) channel frequency response, noise and signal-to-noise measurements at a second end of the channel (CPE) (col. 8, lines 10-15). Levin does not explicitly disclose analyzing time dependent changes in cross talk levels and line attenuation at the second end of the channel. Zuranski in a similar field of endeavor discloses analyzer (130) analyze time dependent changes (performs spectral analysis, the analyzer performs FFT and can also perform inverse Fourier transformation, in a

Art Unit: 2611

first frequency range through an equalizer reducing or attenuating cross talk) in cross talk levels and line attenuation at the second end of the channel (col. 4, lines 1-2, 30-35, 53-67; col. 5, lines 1-12, 30-40; col. 9, lines 25-30, 31-63; vcol. 13, lines 18-42). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to analyze time dependent changes (noise or cross talk signal to noise ratio) to maintain line attenuation as taught by Zuranski in the system of Levin because it can reduce or mitigate the near and far end cross talk noise from data propagated in data rate upstream or downstream of communication signal.

Regarding claims 2, 11 and 32, Levin discloses first end comprises a central office (CO) end, and the second end comprises a premise equipment (CPE) end (fig. 1; col. 3, lines 50-60).

As per claims 3, 6, 12, 15, 33 and 36, Levin discloses the channel is asymmetrical as in ADSL (col. 3, lines 51-51).

As per claims 4, 13 and 34, these claims are analyzed in a similar fashion as claims 2, 11 and 32 as Levin discloses transmitter to receiver and receiver to transmitter functions in a transceiver embodiment.

Regarding claims 5, 14 and 35, Levin discloses the channel is non-overlapping (see col. 4, lines 15-31).

As per claims 7, 16 and 37, the claims are design related and the xDSL technology can be adapted to a very high bit-rate DSL channel in Levin.

As per claim 31, Levin and Zuranski combined disclose all limitations of the claim. Zuranski further discloses a computer or other computing device, which

Art Unit: 2611

obviously could store program instructions or steps for retrieving channel characteristics (modem) of a discrete multi tone communication system (col. 6, lines 31-36).

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

(US Pub. 2002/0131371) to Rudnick.

(USP 6,044,403) to Gerszberg et al.

(USP 6,373,860) to O'Toole et al.

(USP 6,192,109) to Amrany et al.

(USP 5,487,069) to O'Sullivan.

(USP 6,721,394) to Murphy et al.

(USP 6,724,849) to Long et al.

(US Pub. 2005/0041753) to Cunningham.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone

Art Unit: 2611

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.  
August 31, 2006.

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER